

Docket No.: K-0244



PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

In re Application of

Confirmation No.: 6517

Ji Woong Kim

Group Art Unit: 2151

Serial No.: 09/740,846

Examiner: Hassan A. Phillips

Filed: December 21, 2004

Customer No.: 34610

For: INTERNET MICROWAVE OVEN

**TRANSMITTAL OF APPEAL BRIEF**

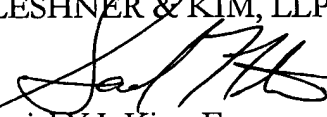
U.S. Patent and Trademark Office  
Customer Window, Mail Stop Appeal Brief-Patents  
Randolph Building  
401 Dulany Street  
Alexandria, Virginia 22314

Sir:

Submitted herewith is Appellant's Appeal Brief in support of the Notice of Appeal filed April 10, 2006. Enclosed is Check No. 17802 for the Appeal Brief fee of \$500.00.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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Docket No: K-244

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re Application of	:	Confirmation No: 6517
	)	
KIM, Ji Woong	:	Examiner: Phillips, Hassan A
	)	
Serial No: 09/740,846	:	Group Art Unit: 2151
	)	
Filed: December 21, 2000	:	Customer No. 34610
	)	
	:	
For: INTERNET MICROWAVE OVEN		

**APPEAL BRIEF**

U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop Appeal Brief - Patents  
Randolph Building  
401 Dulany Street  
Alexandria, Virginia 22314

Sir:

This Appeal Brief is submitted pursuant to the Notice of Appeal filed on April 10, 2006,  
in connection with the above-identified application.

**REAL PARTY IN INTEREST**

The real party in interest is LG Electronics Incorporated by virtue of an Assignment  
recorded on December 21, 2000, under reel/frame 011406/0305.

06/12/2006 JADD01 00000055 09740846

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500.00 OP

**RELATED APPEALS AND INTERFERENCES**

No appeals or interferences are pending in connection with this application.

### **STATUS OF THE CLAIMS**

Claims 8-10, 12-22 and 24-38 have been finally rejected and are the subject of this appeal. A complete copy of the claims on appeal is set forth in the Appendix attached to this paper. Claims 1-7, 11, and 23 have been canceled.

### **STATUS OF AMENDMENTS**

There is no status to report regarding the non-entry of any after-final amendment. All claim amendments have been entered and at least some of the claims have been rejected twice, thereby making this appeal proper.

### **SUMMARY OF THE CLAIMED SUBJECT MATTER**

As noted in the Background section of the specification, microwave ovens designed to receive cooking information from external electronic sources were known at the time the claimed invention was made. These ovens, however, were seen as disadvantageous principally because the cooking information first had to be downloaded to a personal computer. The personal computer would then transmit the cooking information to the oven through a repeater. (See Figure 1).

This presented several problems. First, the additional hardware introduced by the personal computer proved to complicate the cooking process and increase costs. Second, the personal computer was placed at a separate remote location from the oven, which proved to be a significant inconvenience to the user. Third, the challenge of connecting the personal

computer to the oven proved, for all practical purposes, to be complicated, requiring assistance from a technician for installation and maintenance.

The present invention overcomes these drawbacks by providing a microwave oven which includes a built-in Internet search engine and all the signal converting and computing circuits that enable the oven to be programmed based on cooking information downloaded directly from the Internet. By integrating all of the components into the oven, the invention provides a stand-alone, self-sufficient oven which is automatically programmed without the use of separate or additional hardware (e.g., personal computer, repeater, etc.), with far greater convenience to the user, and at a substantially reduced cost compared with systems such as shown in Figure 1.

In accordance with one embodiment which falls within the scope of independent claims 8 and 33, the microwave oven of the present invention includes an access unit (e.g., a modem) 11 connected to a communication line for accessing the Internet, a search engine 12 to perform a search for cooking information when the Internet is accessed through the access unit, a display unit 14 for displaying results of the Internet search, and a microcomputer 15 for performing various control functions. The oven further includes a signal converting unit 13 which is preferably in communication with the aforementioned circuits. (See, e.g., page 5, line 6 - page 7, line 2 with reference to Figures 2 and 3).

In operation, the signal converting unit (1) receives downloaded cooking information associated with one of the displayed results of the Internet search and (2) automatically converts the cooking information into a signal capable of being recognized by the

microcomputer when the displayed result is selected by a user. (See, e.g., the specification at pages 5 and 6). The conversion operation may be performed in response to a first user signal. The signal corresponding to the converted cooking information is then used to control the microcomputer to automatically set the oven to perform a cooking operation in response to a user signal. (See, e.g., the specification at pages 6 and 7).

According to one embodiment, the cooking information automatically sets at least one cooking parameter of the oven, and food is cooked in accordance with the at least one set parameter in response to a second user signal. (Claim 9). The second user signal may be generated from activation of a cooking start button. (Claims 12 and 24).

One embodiment of a method of the present invention covers the same or similar operations. In this method which falls within the scope of independent claim 22, the results of an Internet search performed by a browser in the oven are displayed. A first user signal selecting one of the Internet search results is then received. These operations are followed by automatically converting cooking information corresponding to the selected one of the Internet search results into a signal recognizable by a microcomputer in the oven in response to the first user signal, and then receiving a second user signal for cooking food in the oven based on the signal corresponding to the converted cooking information. (See, e.g., page 5, line 6 - page 7, line 2 with reference to Figures 2 and 3).

The search engine and the signal converting unit may perform data communication in accordance with RS-232C communication standards. (See Figure 3).

The communication that takes place between the signal converting unit and the microcomputer for automatically programming the oven is also a desirable feature of the invention. As discussed at pages 7 and 8 with reference to Figure 4, the microcomputer receives the signal corresponding to the converted cooking information from the signal converting circuit based on a data transmission available signal. When the data transmission available signal assumes a first level, the converter is in a state for sending data to the microcomputer. And when the data transmission available signal assumes a second level, the microcomputer is in a state for receiving data from the converter. (See Figure 4).

The microcomputer also receives the converted signal containing the cooking information in synchronism with a data receive property signal and recognizes that it is in a ready state to receive data when the data receive property signal assumes a first value. When the data receive property signal assumes a second value, the microcomputer recognizes that it is in a state where data reading has been completed. (See pages 7 and 8 and Figure 4)

Additionally, the microcomputer receives a global interrupt signal and a data read control signal (e.g., 1-byte in length) when the data transmission available signal assumes the first level. These signals help to synchronize the operations with the microcomputer. The data transmission available signal, the global interrupt signal, the data read control signal, and the data receive property signal are received through different ports of the microcomputer for improved control. (See pages 7 and 8 with reference to Figure 4). The features described in the preceding four paragraphs are covered, for example, by claims 14-21, 27-32, 37, and 38.

The invention therefore represents as a significant improvement in the art, as it provides a stand-alone, self-sufficient oven which contains all of the circuits required to allow a user to search and select cooking information downloaded from an Internet search, and also to convert that cooking information into electrical signals for automatically programming the oven to cook food based on the cooking information. No additional or separate hardware is required to perform these functions, thereby resulting in substantial cost savings and increased convenience to the user.

#### **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

- 1) Claims 8-16, 22, 24-27, and 29 stand rejected under 35 U.S.C. §103(a) for being obvious over the Fowler patent (U.S. Patent No. 5,653,906) in view of the Thurm publication entitled "Whirlpool to Launch Internet-Ready Refrigerator."
- 2) Claims 17-21, 28, and 30-32 stand rejected under 35 U.S.C. § 103(a) for being obvious over the Fowler patent in view of the Thurm publication and Perholtz patent (U.S. Patent No. 5,732,212).
- 3) Claims 33-38 stand rejected under 35 USC § 103(a) for being obvious over the Emmott publication (EP Patent 0 965 795) in view of the Thurm publication.
- 4) Claim 37 stand rejected under 35 USC § 103(a) for being obvious over the Emmott publication in view of the Thurm publication and Fowler patent.

### **ARGUMENT**

Appellant respectfully submits that the rejections in the Final Office Action are improper for the following reasons.

#### **I. Claims 33-38 are Non-Obvious over an Emmott-Thurm Combination.**

Claim 33 recites a microwave oven which includes a microcomputer, a search engine, and a signal converting unit. The search engine performs an Internet search for cooking information and the signal converting unit performs the following functions based on information obtained from the search engine:

- 1) “automatically converting the downloaded cooking information into a signal capable of being recognized by the microcomputer when said one of the displayed results is selected by a user;” and
- 2) the converted signal “control[s] the microcomputer to automatically set the oven to perform a cooking operation in response to a user signal.”

In other words, when a user selects one of the displayed results of an Internet search for cooking information, the selected result is converted into a signal which automatically sets the oven (e.g., time, cooking power, or other cooking parameter) to perform a cooking operation for a specific type of food. As emphasized below, all of these functions are performed within the oven without the assistance of any external electronic devices.

In order to establish a *prima facie* case of obviousness for claim 33, two requirements must be satisfied. First, the cited references must teach or suggest all the features in claim 33. Second, there must have been some teaching or suggestion in existence at the time the claimed



invention was made that would have led one of ordinary skill in the art to combine the references in an attempt to form the invention of claim 33. See MPEP § 2143.01 and *In re Rouffet*, 47 USPQ.2d 1453, 1457 (Fed. Cir. 1998). The cited references fail to satisfy at least the first requirement of this test.

The Emmott publication discloses an oven having an Internet search engine. When a search for cooking information is performed, a display in the oven shows the results. One of the results may then be downloaded for viewing based on a user selection. (See Paragraphs [0027] - [00310] and column 7, claim 2.)

Unlike claim 33, the Emmott oven does not include a signal converting unit which automatically converts cooking information downloaded from an Internet search into a signal capable of being recognized by a microcomputer when one of the displayed results from the search is selected by a user. Emmott also does not use such a converted signal to control an internal microcomputer to automatically set the oven to perform a cooking operation in response to a user signal, as further recited in claim 33. Instead, when one of the search results is displayed on the Emmott oven, a user must manually set the oven parameters to perform a cooking operation. No signal conversion and automatic setting operation of the type claimed is ever performed.

The Thurm publication does not make up for the deficiencies of the Emmott publication. The Thurm publication discloses a refrigerator having an Internet connection and a display screen. In operation, a user downloads cooking information (e.g., a recipe) through the Internet connection for display on the refrigerator display screen. The recipe is then used

to automatically program the oven to cook the recipe. (See the fourth paragraph under the Full Text section.)

The Thurm system, thus, requires an external appliance in the form of a refrigerator to program the cooking of food based on a recipe derived from the Internet. That is, the system disclosed in the Thurm publication requires a refrigerator to access and display a recipe received from the Internet. The oven is then programmed based on the recipe, which it receives from the refrigerator. The Thurm oven, therefore, relies on and in fact cannot be programmed without the refrigerator. In contrast, the claimed invention performs all access, signal conversion, computing, and programming functions within a stand-alone, self-sufficient oven. No other external appliances are required.

The Thurm system is therefore analogous to system shown in Figure 1 of Appellants' drawings, except that a refrigerator is used instead of a personal computer. Both Thurm and the Figure 1 system require additional hardware for their operation. As explained in the Background section of the specification, such a system is disadvantageous because it has proven to be more costly, more complex, and less efficient to use than the claimed invention.

Moreover, the Thurm publication is completely silent on what circuits may be used to program its oven or where such circuits may be located. In order to satisfy the first requirement for establishing a *prima facie* case of obviousness, the cited references must teach or suggest all of the features recited in a claim. No single element can be omitted. Further, those skilled in the art cannot be left guessing as to whether a claimed element may or may not exist in a prior art disclosure. Instead, the Board has repeatedly held that a conclusion of

obviousness must be based on some objective teaching or suggestion in the prior art of the features recited in a rejected claim. *In re Rouffet*, 47 USPQ.2d 1453, 1457 (Fed. Cir. 1998). The Thurm publication does not provide one of ordinary skill in the art any indication of the internal structure features of its refrigerator and oven, except to say that the refrigerator includes an Internet connection.

Regarding claim 33 specifically, the Thurm publication does not teach or suggest that its oven includes a microcomputer and a signal converting unit, the latter of which performs the functions of “automatically converting the downloaded cooking information into a signal capable of being recognized by the microcomputer when said one of the displayed results is selected by a user,” and that the converted signal is then used to “control the microcomputer to automatically set the oven to perform a cooking operation in response to a user signal.” Absent a teaching or suggestion of these features, Appellants submit that the Thurm publication cannot be relied on to provide the features of claim 33 missing from the Emmott publication.

Finally, in order to qualify as a proper “reference,” the Thurm publication must be enabling with respect to the claimed invention. *In re Sun*, 31 USPQ.2d 1451 (Fed. Cir. 1993) and *In re Donohue*, 226 USPQ 619 (Fed. Cir. 1985). The sum total of the Thurm disclosure relied on to reject claim 33 is: “a consumer will be able to download a recipe from the Internet through a touch screen on the refrigerator, and automatically program the oven to cook the recipe.” (See fourth paragraph of Full Text section). In determining its eligibility as a reference,

this sentence must be read through the eyes of one of ordinary skill art, i.e., how one of ordinary skill in the art would understand this disclosure.

However, the Thurm publication provides no indication, either explicitly or through the eyes of one of ordinary skill in the art, of the specific internal circuits of its refrigerator and oven except to say that the refrigerator has an Internet connection. Thurm provides no teaching or suggestion that its oven has microcomputer and signal converting circuits which perform the functions recited in claim 33.

Without any indication of the internal circuits of the refrigerator and oven, one of ordinary skill in the art would be required to perform a significant amount of experimentation in making the system disclosed in the Thurm publication. Accordingly, it is submitted that the Thurm publication is non-enabling and therefore an improper reference with respect to the invention defined in claim 33.

Regarding these omissions in Thurm, Appellants further emphasize that “obvious to try” is not the proper standard for determining obviousness under § 103(a). *In re Fine*, 5 USPQ.2d 1596 (Fed. Cir. 1988). That is, it is improper for purposes of rejecting claim 33 to take the position that it may have been obvious to try to insert into the Thurm oven a signal converting unit and microcomputer of the type recited in claim 33. Rather, to establish a *prima facie* of obviousness, the Examiner must show that the Thurm publication objectively teaches or suggests the features of claim 33 omitted from the Emmott publication. MPEP § 2143 et seq. The Thurm publication does not provide a teaching or suggestion of these features.

In summary, Appellants submit that the Emmott and Thurm publications do not teach or suggest, whether taken alone or in combination, a microwave oven having an Internet search engine, microcomputer, and signal converting unit which operate in a stand-alone, self-sufficient manner without the assistance of any other appliance, and further where the signal converting unit performs the functions of:

- 1) “automatically converting the downloaded cooking information into a signal capable of being recognized by the microcomputer when said one of the displayed results is selected by a user;” and that
- 2) the converted signal “control[s] the microcomputer to automatically set the oven to perform a cooking operation in response to a user signal.”

For at least these reasons, Appellants submit that claim 33 and its dependent claims are allowable over an Emmott-Thurm combination.

Dependent Claim 37.

Dependent claim 37 separately recites that the microcomputer in the oven “recognizes a data transmission zone of the signal converting unit if a high signal generated by the signal converting unit is applied to the microcomputer, while the microcomputer recognizes a data transmission zone of the microcomputer if a low signal is applied to the microcomputer.” These features are not taught or suggested by the Emmott and Thurm publication, whether taken alone or in combination.

Appellants further emphasize that, in the Final Office Action, the Examiner provided no explanation whatsoever of how an Emmott-Thurm combination supplies the features recited in claim 37. Without such an explanation, Appellants respectfully submit that the rejection is in error as a matter of law and should be withdrawn.

**II. Claims 8-16, 22, 24-27, and 29 are Non-Obvious over a Fowler-Thurm Combination.**

Claim 8 recites a microwave oven having:

- 1) “a converter which automatically converts one of a plurality of displayed results of an Internet search containing cooking information into a signal recognizable by the microcomputer in response to a first user signal,”
- 2) that “the first user signal selects said one of said plurality of displayed results of the Internet search,” and
- 3) that “the converted signal controls the microcomputer to automatically generates a control signal to set the oven to cook food based on the cooking information in response to a second user signal.”

These features are not taught or suggested by the Fowler patent and Thurm publication, whether taken alone or in combination.

The Fowler patent discloses a microwave oven which receives customer orders stored in a queue in a fast-food restaurant. (The orders are received from a cash register unit storing a LONworks module that contains the queue.) When a customer order is received, the oven is programmed with a cooking time or other parameter. An attendant then puts the food in the oven and presses a START button and the food is cooked. (See column 11, lines 26-67). The Fowler patent, however, does not teach or suggest performing any function based on the

results of an Internet search and therefore fails to teach or suggest features 1) - 3) of claim 8 enumerated above.

The Thurm publication is also deficient in this respect. The Thurm publication discloses an oven which is programmed to cook a recipe downloaded through the Internet to a refrigerator. The Thurm publication does not teach or suggest that its oven includes 1) “a converter which automatically converts one of a plurality of displayed results of an Internet search containing cooking information into a signal recognizable by the microcomputer in response to a first user signal,” 2) that “the first user signal selects said one of said plurality of displayed results of the Internet search,” and 3) that “the converted signal controls the microcomputer to automatically generates a control signal to set the oven to cook food based on the cooking information in response to a second user signal.”

Moreover, the Thurm publication is non-enabling with respect to these features and therefore fails to qualify as a “reference” for purposes of rejecting the claims at issue.

Because the Fowler patent and Thurm publication fail to individually or collectively teach or suggest features 1) - 3) of claim 8 enumerated above, Appellants submit that a Fowler-Thurm combination cannot be relied on to establish a *prima facie* case of obviousness with respect to this claim or any of its dependent claims.

Dependent Claim 13.

Dependent claim 13 separately recites that the wherein the “signal converter is coupled between the microcomputer and the search engine.” The Fowler patent and Thurm publication do not individually or collectively teach or suggest the signal converter of claim 8. Consequently, these references do not teach or suggest that such a signal converter is coupled between a microcomputer and search engine within the oven.

Moreover, in rejecting claim 13, the Examiner relied principally on the disclosure of Thurm of an Internet search engine. However, this Internet search engine is located in a refrigerator, not in a microwave oven as required by claim 13 and base claim 8. Still further, Thurm is completely silent as to the microcomputer and signal converter of the claimed invention. Absent a teaching or suggestion of these features, Appellants submit that the Examiner cannot rely on the mere disclosure of an Internet connection in a refrigerator as provided in Thurm to supply the teaching or suggestion necessary to establish a *prima facie* case of obviousness of claim 13.

Accordingly, Appellants submit that claim 13 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claim 8 but also based on the features separately recited therein.



Dependent Claim 14.

Dependent claim 14 recites that “the microcomputer receives the converted signal containing the cooking information from the converter based on a data transmission available signal.” The Fowler patent and Thurm publication do not individually or collectively teach or suggest the signal converter of claim 8. Consequently, these references do not teach or suggest the features of claim 14 that relate to the “converted signal.”

Moreover, in rejecting claim 14, the Examiner relied on column 7, lines 65-67, and column 8, lines 1-6, to provide the features of claim 14. These disclosures do not teach or suggest the features of claim 14 for at least two reasons. First, the Fowler oven is not connected to the Internet and therefore does not perform functions based on cooking information derived from an Internet search. Instead, the Fowler oven is programmed based on information received from a cash register in a fast-food restaurant.

Second, column 7, lines 65-67 and column 8, lines 1-6 merely disclose a display control module which is coupled to a standard input/output interface for receiving orders from the cash register stored in a queue. Neither this portion of Fowler nor any other portion teaches or suggests an Internet microwave oven microcomputer which “receives the converted signal containing the cooking information from the converter based on a data transmission available signal” as recited in claim 14.

Accordingly, Appellants submit that claim 14 is non-obvious and thus patentable over a Fowler-Thurm combination, not only by virtue of its dependency from claim 8 but also based on the features separately recited therein.

Dependent Claim 15.

Dependent claim 15 recites that “the data transmission available signal indicates that the converter is in a state for sending data to the microcomputer.” The Fowler patent and Thurm publication do not individually or collectively teach or suggest the signal converter of claim 8, and therefore do not teach or suggest a data transmission available signal that indicates the state of such a converter for sending data to a microcomputer. Accordingly, Appellants submit that claim 15 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claims 8 and 14 but also based on the features separately recited therein.

Dependent Claim 16.

Dependent claim 16 recites that “the data transmission available signal assumes a first level when the converter is in a state for sending data to the microcomputer and assumes a second level when the microcomputer is in a state for receiving data from the converter.” The Fowler patent and Thurm publication do not individually or collectively teach or suggest the data transmission available signal, let alone one having different signal levels corresponding to the sending and receiving of data as specified in claim 16. Moreover, in rejecting this claim, the Examiner once again relied on Fowler which does not provide any signal relating to an Internet search oven.

Accordingly, Appellants submit that claim 16 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claims 8 and 15 but also based on the features separately recited therein.

Independent Claim 22.

Independent claim 22 recites a method for operating a microwave oven, comprising:

- 1) “displaying results of an Internet search performed by a browser in the oven;”
- 2) “receiving a first user signal selecting of one of the Internet search results;”
- 3) “automatically converting cooking information corresponding to the selected one of the Internet search results into a signal recognizable by a microcomputer in the oven in response to the first user signal;” and
- 4) “receiving a second user signal for cooking food in the oven based on the signal corresponding to the converted cooking information.”

Whether taken individually or collectively, the Fowler patent and Thurm publication does not teach or suggest these features.

The Fowler patent discloses an oven connected to a cash register, not to the Internet. Without any access to the Internet, it is clear that the Fowler oven does not teach or suggest “displaying results of an Internet search performed by a browser in the oven” as set forth in 1) above. And without feature 1), Fowler cannot teach or suggest features 2) – 4) which are dependent on 1).

The Thurm publication discloses a refrigerator having an Internet connection. Thurm does not disclose that its oven includes an Internet search engine and therefore fails to teach or suggest the features in 1) above. For reasons previously discussed, Thurm also fails to teach or suggest the features in 2) - 4) listed above.

Based on the foregoing omissions, Appellants submit that claim 22 and its dependent claims are non-obvious and thus patentable over a Fowler-Thurm combination.

Dependent Claim 26.

Dependent claim 26 recites that “a first control signal allows the microcomputer to sense an operational state of a signal converting unit.” The Fowler patent and Thurm publication fail to individually or collectively teach or suggest the signal converting unit of the claimed invention including its placement inside of the oven. It therefore logically follows that Fowler and Thurm fail to teach or suggest the specific features of claim 26.

Accordingly, Appellants submit that claim 26 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claims 22 and 25 but also based on the features separately recited therein.

Dependent Claim 27.

Dependent claim 27 recites that “the microcomputer recognizes a data transmission zone of the signal converting unit when the first control signal assumes a first level and recognizes a data transmission zone of the microcomputer the first control signal assumes a second level.” The Fowler patent and Thurm publication do not teach or suggest these features. In rejecting claim 27, the Examiner relied on column 18, lines 65-67 and column 19, lines 1-12 of the Fowler patent to provide the features in this claim. However, Fowler discloses an oven connected to a cash register, not the Internet. Moreover, columns 18 and 19 only recite a microcontroller for an oven magnetron connected to a cash register. Neither this portion nor any other portion of Fowler teaches or suggest the features of claim 27 included in an oven connected to the Internet.

Accordingly, Appellants submit that claim 27 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claims 22 and 26 but also based on the features separately recited therein.

Dependent Claim 29.

Dependent claim 29 recites that “a third control signal is data read control signal which is input into the microcomputer when the first control signal assumes said first level.” These features are not taught or suggested by Fowler and Thurm, whether taken alone or in combination. In rejecting claim 29, the Examiner acknowledged that these features are not taught or suggested in the Fowler patent. Nevertheless, the Examiner indicated that such features are implicit in the disclosure provided at column 27, lines 25-43. However, this portion of Fowler merely specifies the serial communication protocol used to transmit information to the Fowler oven from, for example, the cash register.

Accordingly, Appellants submit that claim 29 is non-obvious over a Fowler-Thurm combination, not only by virtue of its dependency from claims 22 and 27 but also based on the features separately recited therein.

**III. Claims 17-21, 28, and 30-32 are Non-Obvious over a Fowler-Thurm-Perholtz Combination.**

Claims 17-21 depend from claim 8. In order to establish a *prima facie* case if obviousness for these dependent claims, the Perholtz patent must teach or suggest the features of claim 8 missing from the Fowler and Thurm publication.

The Perholtz patent was cited to show that global interrupt signals were known at the time the claimed invention was made. This patent, however, does not teach or suggest the features of the claimed invention outlined in detail in Section II of this paper. Perholtz also fails to teach or suggest the specific types of signals recited in claim 17-21 as specifically applied to an oven as defined in claim 8. That is, while global signals may have been known at the time the claimed invention was made, the Examiner has failed to cite a reference which shows that signals of this type were used to control an oven as recited in claim 8.

**Dependent Claim 17.**

Accordingly, Appellants submit that Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “a global interrupt signal is input into the microcomputer when the data transmission available signal assumes said first level” as recited in claim 17.

**Dependent Claim 18.**

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “a data read control signal is input into the microcomputer when the data transmission available signal assumes said first level” as recited in claim 18.

Dependent Claim 19.

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the data read control signal is a 1-byte interrupt signal” as recited in claim 19.

Dependent Claim 20.

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the microcomputer receives the converted signal containing the cooking information in synchronism with a data receive property signal, and wherein the microcomputer recognizes that it is in a ready state to receive data when the data receive property signal assumes a first value and recognizes that it is in a state where data reading has been completed with the data receive property signal assumes a second value” as recited in claim 20.

Dependent Claim 21.

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the data transmission available signal, the global interrupt signal, the data read control signal, and the data receive property signal are received through different ports of the microcomputer” as recited in claim 21.

Dependent Claim 28.

Claim 28 depends from claim 22. The Perholtz patent does not teach or suggest the features of claim 22 missing from the Fowler patent and Thurm publication. Accordingly,

Appellants submit that claim 28 is non-obvious and thus patentable, not only by virtue of its dependency from claim 22 but also based on the features separately recited therein.

Dependent Claim 30.

Claims 30-32 ultimately depend from claim 22 and therefore are also non-obvious, not only by virtue of this dependency but also based on the features separately recited therein.

Specifically, Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the data read control signal is a 1-byte interrupt signal” as recited in claim 30.

Dependent Claim 31.

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the microcomputer recognizes that it is in a ready state to receive data when a fourth control signal assumes a first value and recognizes that it is in a state where data reading has been completed with the fourth control signal assumes a second value” as recited in claim 31.

Dependent Claim 32.

Fowler, Thurm, and Perholtz do not individually or collectively teach or suggest that “the first, second, third, and fourth control signals are received through different ports of the microcomputer” as recited in claim 32.



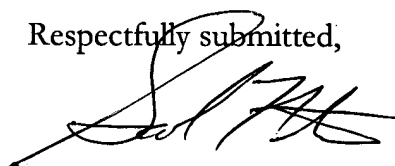
**IV. Claim 37 is Non-Obvious over an Emmott-Thurm-Fowler Combination.**

Claim 37 depends from claim 33. In order to render claim 37 obvious, the Fowler patent must therefore teach or suggest the features of claim 33 missing from the Emmott patent and Thurm publication as outlined in Section I of this paper.

The Fowler patent discloses an oven connected to a cash register, not the Internet. Fowler therefore does not teach or suggest the features of claim 33 missing from an Emmott-Thurm combination. Moreover, Fowler does not teach or suggest the features separately recited in claim 37, namely that “the microcomputer recognizes a data transmission zone of the signal converting unit if a high signal generated by the signal converting unit is applied to the microcomputer, while the microcomputer recognizes a data transmission zone of the microcomputer if a low signal is applied to the microcomputer.”

For the foregoing reasons, Appellants respectfully request the Board to reverse all the rejections in the Final Office Action.

Respectfully submitted,



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**APPENDIX**

8. A microwave oven, comprising:  
a microcomputer; and  
a converter which automatically converts one of a plurality of displayed results of an Internet search containing cooking information into a signal recognizable by the microcomputer in response to a first user signal, wherein the first user signal selects said one of said plurality of displayed results of the Internet search and wherein the converted signal controls the microcomputer to automatically generates a control signal to set the oven to cook food based on the cooking information in response to a second user signal.
9. The oven of claim 8, wherein the cooking information configures at least one cooking parameter of the oven, and wherein the food is cooked in accordance with said at least one parameter in response to the second user signal.
10. The oven of claim 8, further comprising:  
a display for displaying the cooking information.
12. The oven of claim 8, wherein the second user signal is generated from activation of a cooking start button.

13. The oven of claim 8, further comprising:  
a search engine for obtaining the cooking information from an Internet site,  
wherein the signal converter is coupled between the microcomputer and the search engine.
14. The oven of claim 8, wherein the microcomputer receives the converted signal  
containing the cooking information from the converter based on a data transmission available  
signal.
15. The oven of claim 14, wherein the data transmission available signal indicates  
that the converter is in a state for sending data to the microcomputer.
16. The oven of claim 15, wherein the data transmission available signal assumes a  
first level when the converter is in a state for sending data to the microcomputer and assumes  
a second level when the microcomputer is in a state for receiving data from the converter.
17. The oven of claim 16, wherein a global interrupt signal is input into the  
microcomputer when the data transmission available signal assumes said first level.
18. The oven of claim 17, wherein a data read control signal is input into the  
microcomputer when the data transmission available signal assumes said first level.

19. The oven of claim 18, wherein the data read control signal is a 1-byte interrupt signal.

20. The oven of claim 18, wherein the microcomputer receives the converted signal containing the cooking information in synchronism with a data receive property signal, and wherein the microcomputer recognizes that it is in a ready state to receive data when the data receive property signal assumes a first value and recognizes that it is in a state where data reading has been completed with the data receive property signal assumes a second value.

21. The oven of claim 20, wherein the data transmission available signal, the global interrupt signal, the data read control signal, and the data receive property signal are received through different ports of the microcomputer.

22. A method for operating a microwave oven, comprising:  
displaying results of an Internet search performed by a browser in the oven;  
receiving a first user signal selecting of one of the Internet search results;  
automatically converting cooking information corresponding to the selected one of the Internet search results into a signal recognizable by a microcomputer in the oven in response to the first user signal; and  
receiving a second user signal for cooking food in the oven based on the signal corresponding to the converted cooking information.

24. The method of claim 22, wherein the second user signal is generated when a cook start button is pressed by the user.

25. The method of claim 22, wherein the microcomputer controls the oven to cook the food based on a set of control signals.

26. The method of claim 25, wherein a first control signal allows the microcomputer to sense an operational state of a signal converting unit.

27. The method of claim 26, wherein the microcomputer recognizes a data transmission zone of the signal converting unit when the first control signal assumes a first level and recognizes a data transmission zone of the microcomputer the first control signal assumes a second level.

28. The method of claim 27, wherein a second control signal is a global interrupt signal which is input into the microcomputer when the first control signal assumes said first level.

29. The method of claim 27, wherein a third control signal is data read control signal which is input into the microcomputer when the first control signal assumes said first level.

30. The method of claim 28, wherein the data read control signal is a 1-byte interrupt signal.

31. The method of claim 28, wherein the microcomputer recognizes that it is in a ready state to receive data when a fourth control signal assumes a first value and recognizes that it is in a state where data reading has been completed with the fourth control signal assumes a second value.

32. The method of claim 30, wherein the first, second, third, and fourth control signals are received through different ports of the microcomputer.

33. An Internet microwave oven comprising:  
an access unit, connected to a communication line, for accessing the Internet;  
a search engine to perform a search for cooking information when the Internet is accessed through the access unit;  
a microcomputer;  
a display unit for displaying results of the Internet search; and

a signal converting unit for receiving downloaded cooking information associated with one of the displayed results and for automatically converting the downloaded cooking information into a signal capable of being recognized by the microcomputer when said one of the displayed results is selected by a user, said signal corresponding to the converted cooking information controlling the microcomputer to automatically set the oven to perform a cooking operation in response to a user signal.

34. The Internet microwave oven of claim 33, wherein the access unit is a modem.

35. The Internet microwave oven of claim 33, wherein the search engine is an Internet browser.

36. The Internet microwave oven of claim 33, wherein the display unit is a liquid crystal display (LCD).

37. The Internet microwave oven of claim 33, wherein the microcomputer recognizes a data transmission zone of the signal converting unit if a high signal generated by the signal converting unit is applied to the microcomputer, while the microcomputer recognizes a data transmission zone of the microcomputer if a low signal is applied to the microcomputer.

38. The Internet microwave oven of claim 33, wherein the search engine and the signal converting unit perform data communication in accordance with RS-232C communication standards.